SEQUENCE LISTING

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Dennis Huszar
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<120> Compositions and Methods for the Treatment and Diagnosis of Cardiovascular Disease

<130> 7853-140-999

<140> 09/288,292
<141> 1999-04-08

<150> 08/870,434
<151> 1997-06-06

<150> 08/799,910
<151> 1997-02-13

<150> 60/011,787
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<150> 08/485,573
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                                                Met Pro Gly Glu Thr
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gaa gag ccg aga ccc ccg gag cag cag gac cag gaa ggg gga gag gcg      224
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gcc aag gcg gct ccg gag gag ccc caa caa cgg ccc cct gag gcg gtc      272
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cgg gac cga ggc cgg gcc gct gcg gcc gcc gcc gcc gca gct gtg tcc      368
Arg Asp Arg Gly Arg Ala Ala Ala Ala Ala Ala Ala Ala Ala Val Ser
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cgc cgg agg aag gcc gag tat ccc cgc cgg cgg agg agc agc ccc agc      416
Arg Arg Arg Lys Ala Glu Tyr Pro Arg Arg Arg Arg Ser Ser Pro Ser
70                  75                  80                  85

gcc agg cct ccc gac gtc ccc ggg cag cag ccc cag gcc gcg aag tcc      464
Ala Arg Pro Pro Asp Val Pro Gly Gln Gln Pro Gln Ala Ala Lys Ser
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ccg tct cca gtt cag ggc aag aag agt ccg cga ctc cta tgc ata gaa      512
Pro Ser Pro Val Gln Gly Lys Lys Ser Pro Arg Leu Leu Cys Ile Glu
            105                 110                 115

aaa gta aca act gat aaa gat ccc aag gaa gaa aaa gag gaa gaa gac      560
Lys Val Thr Thr Asp Lys Asp Pro Lys Glu Glu Lys Glu Glu Glu Asp
        120                 125                 130

gat tct gcc ctc cct cag gaa gtt tcc att gct gca tct aga cct agc      608
Asp Ser Ala Leu Pro Gln Glu Val Ser Ile Ala Ala Ser Arg Pro Ser
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cgg ggc tgg cgt agt agt agg aca tct gtt tct cgc cat cgt gat aca      656
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150                 155                 160                 165

gag aac acc cga agc tct cgg tcc aag acc ggt tca ttg cag ctc att      704
Glu Asn Thr Arg Ser Ser Arg Ser Lys Thr Gly Ser Leu Gln Leu Ile
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tgc aag tca gaa cca aat aca gac caa ctt gat tat gat gtt gga gaa      752
Cys Lys Ser Glu Pro Asn Thr Asp Gln Leu Asp Tyr Asp Val Gly Glu
            185                 190                 195

gag cat cag tct cca ggt ggc att agt ggt gaa gag gaa gag gag gag      800
Glu His Gln Ser Pro Gly Gly Ile Ser Gly Glu Glu Glu Glu Glu Glu
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gaa gaa gag atg tta atc agt gaa gag gag ata cca ttc aaa gat gat      848
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cca aga gat gag acc tac aaa ccc cac tta gaa agg gaa acc cca aag      896
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cca cgg aga aaa tca ggg aag gta aaa gaa gag aag gag aag aag gaa      944
Pro Arg Arg Lys Ser Gly Lys Val Lys Glu Glu Lys Glu Lys Lys Glu
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att aaa gtg gaa gta gag gtg gag gtg aaa gaa gag gag aat gaa att      992
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Arg Glu Asp Glu Glu Pro Pro Arg Lys Arg Gly Arg Arg Arg Lys Asp
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gac aaa agt cca cgt tta ccc aaa agg aga aaa aag cct cca atc cag     1088
Asp Lys Ser Pro Arg Leu Pro Lys Arg Arg Lys Lys Pro Pro Ile Gln
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Tyr Val Arg Cys Glu Met Glu Gly Cys Gly Thr Val Leu Ala His Pro
310                 315                 320                 325

cgc tat ttg cag cac cac att aaa tac cag cat ttg ctg aag aag aaa     1184
Arg Tyr Leu Gln His His Ile Lys Tyr Gln His Leu Leu Lys Lys Lys
                330                 335                 340

tat gta tgt ccc cat ccc tcc tgt gga cga ctc ttc agg ctt cag aag     1232
Tyr Val Cys Pro His Pro Ser Cys Gly Arg Leu Phe Arg Leu Gln Lys
            345                 350                 355

caa ctt ctg cga cat gcc aaa cat cat aca gat caa agg gat tat atc     1280
Gln Leu Leu Arg His Ala Lys His His Thr Asp Gln Arg Asp Tyr Ile
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tgt gaa tat tgt gct cgg gcc ttc aag agt tcc cac aat ctg gca gtg     1328
Cys Glu Tyr Cys Ala Arg Ala Phe Lys Ser Ser His Asn Leu Ala Val
    375                 380                 385

cac cgg atg att cac act ggc gag aag cca tta caa tgt gag atc tgt     1376
His Arg Met Ile His Thr Gly Glu Lys Pro Leu Gln Cys Glu Ile Cys
390                 395                 400                 405

gga ttt act tgt cga caa aag gca tct ctt aat tgg cac atg aag aaa     1424
Gly Phe Thr Cys Arg Gln Lys Ala Ser Leu Asn Trp His Met Lys Lys
                410                 415                 420

cat gat gca gac tcc ttc tac cag ttt tct tgc aat atc tgt ggc aaa     1472
His Asp Ala Asp Ser Phe Tyr Gln Phe Ser Cys Asn Ile Cys Gly Lys
            425                 430                 435

aaa ttt gag aag aag gac agc gta gtg gca cac aag gca aaa agc cac     1520
Lys Phe Glu Lys Lys Asp Ser Val Val Ala His Lys Ala Lys Ser His
        440                 445                 450

cct gag gtg ctg att gca gaa gct ctg gct gcc aat gca ggc gcc ctc     1568
Pro Glu Val Leu Ile Ala Glu Ala Leu Ala Ala Asn Ala Gly Ala Leu
    455                 460                 465

atc acc agc aca gat atc ttg ggc act aac cca gag tcc ctg acg cag     1616
Ile Thr Ser Thr Asp Ile Leu Gly Thr Asn Pro Glu Ser Leu Thr Gln
470                 475                 480                 485

cct tca gat ggt cag ggt ctt cct ctt ctt cct gag ccc ttg gga aac     1664
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                490                 495                 500

tca acc tct gga gag tgc cta ctg tta gaa gct gaa ggg atg tca aag     1712
Ser Thr Ser Gly Glu Cys Leu Leu Leu Glu Ala Glu Gly Met Ser Lys
            505                 510                 515

tca tac tgc agt ggg acg gaa cgg gtg agc ctg atg gct gat ggg aag     1760
Ser Tyr Cys Ser Gly Thr Glu Arg Val Ser Leu Met Ala Asp Gly Lys
        520                 525                 530

atc ttt gtg gga agc ggc agc agt gga ggc act gaa ggg ctg gtt atg     1808
Ile Phe Val Gly Ser Gly Ser Ser Gly Gly Thr Glu Gly Leu Val Met
    535                 540                 545

aac tca gat ata ctc ggt gct acc aca gag gtt ctg att gaa gat tca     1856
Asn Ser Asp Ile Leu Gly Ala Thr Thr Glu Val Leu Ile Glu Asp Ser
550                 555                 560                 565

gac tct gcc gga cct tagtggacag gaagacttgg ggcatgggac agctcagact     1911
Asp Ser Ala Gly Pro
                570

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gcgcatgcca cggagcgccc ctcgggccgc cgccgctcct gcccgggccc ctgctgctgc     180
tgctgtcgcc tgcgcctgct gccccaactc ggcgcccgac tcacaaagaa acatcatgtt     240
cgctccttag caggcaaacg acttttctcc tcgcctcctc gccccgc atg ttc agg       296
                                                  Met Phe Arg
                                                   1

acc aaa cga tct gcg ctc gtc cgg cgt ctc tgg agg agc cgt gcg ccc       344
Thr Lys Arg Ser Ala Leu Val Arg Arg Leu Trp Arg Ser Arg Ala Pro
 5                  10                  15

ggc ggc gag gac gag gag gag ggc gca ggg gga ggt gga gga gga ggc       392
Gly Gly Glu Asp Glu Glu Glu Gly Ala Gly Gly Gly Gly Gly Gly Gly
20                  25                  30                  35

gag ctg cgg gga gaa ggg gcg acg gac agc cga gcg cat ggg gcc ggt       440
Glu Leu Arg Gly Glu Gly Ala Thr Asp Ser Arg Ala His Gly Ala Gly
                40                  45                  50

ggc ggc ggc ccg ggc agg gct gga tgc tgc ctg ggc aag gcg gtg cga       488
Gly Gly Gly Pro Gly Arg Ala Gly Cys Cys Leu Gly Lys Ala Val Arg
            55                  60                  65
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ggt gcc aaa ggt cac cac cat ccc cac ccg cca gcc gcg ggc gcc ggc 536
Gly Ala Lys Gly His His His Pro His Pro Pro Ala Ala Gly Ala Gly
70 75 80

gcg gcc ggg ggc gcc gag gcg gat ctg aag gcg ctc acg cac tcg gtg 584
Ala Ala Gly Gly Ala Glu Ala Asp Leu Lys Ala Leu Thr His Ser Val
85 90 95

ctc aag aaa ctg aag gag cgg cag ctg gag ctg ctg ctc cag gcc gtg 632
Leu Lys Lys Leu Lys Glu Arg Gln Leu Glu Leu Leu Leu Gln Ala Val
100 105 110 115

gag tcc cgc ggc ggg acg cgc acc gcg tgc ctc ctg ctg ccc ggc cgc 680
Glu Ser Arg Gly Gly Thr Arg Thr Ala Cys Leu Leu Leu Pro Gly Arg
120 125 130

ctg gac tgc agg ctg ggc ccg ggg gcg ccc gcc ggc gcg cag cct gcg 728
Leu Asp Cys Arg Leu Gly Pro Gly Ala Pro Ala Gly Ala Gln Pro Ala
135 140 145

cag ccg ccc tcg tcc tac tcg ctc ccc ctc ctg ctg tgc aaa gtg ttc 776
Gln Pro Pro Ser Ser Tyr Ser Leu Pro Leu Leu Leu Cys Lys Val Phe
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agg tgg ccg gat ctc agg cat tcc tcg gaa gtc aag agg ctg tgt tgc 824
Arg Trp Pro Asp Leu Arg His Ser Ser Glu Val Lys Arg Leu Cys Cys
165 170 175

tgt gaa tct tac ggg aag atc aac ccc gag ctg gtg tgc tgc aac ccc 872
Cys Glu Ser Tyr Gly Lys Ile Asn Pro Glu Leu Val Cys Cys Asn Pro
180 185 190 195

cat cac ctt agc cga ctc tgc gaa cta gag tct ccc ccc cct cct tac 920
His His Leu Ser Arg Leu Cys Glu Leu Glu Ser Pro Pro Pro Pro Tyr
200 205 210

tcc aga tac ccg atg gat ttt ctc aaa cca act gca gac tgt cca gat 968
Ser Arg Tyr Pro Met Asp Phe Leu Lys Pro Thr Ala Asp Cys Pro Asp
215 220 225

gct gtg cct tcc tcc gct gaa aca ggg gga acg aat tat ctg gcc cct 1016
Ala Val Pro Ser Ser Ala Glu Thr Gly Gly Thr Asn Tyr Leu Ala Pro
230 235 240

ggg ggg ctt tca gat tcc caa ctt ctt ctg gag cct ggg gat cgg tca 1064
Gly Gly Leu Ser Asp Ser Gln Leu Leu Leu Glu Pro Gly Asp Arg Ser
245 250 255

cac tgg tgc gtg gtg gca tac tgg gag gag aag acg aga gtg ggg agg 1112
His Trp Cys Val Val Ala Tyr Trp Glu Glu Lys Thr Arg Val Gly Arg
260 265 270 275

ctc tac tgt gtc cag gag ccc tct ctg gat atc ttc tat gat cta cct 1160
Leu Tyr Cys Val Gln Glu Pro Ser Leu Asp Ile Phe Tyr Asp Leu Pro
280 285 290

cag ggg aat ggc ttt tgc ctc gga cag ctc aat tcg gac aac aag agt 1208
Gln Gly Asn Gly Phe Cys Leu Gly Gln Leu Asn Ser Asp Asn Lys Ser

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cag ctg gtg cag aag gtg cgg agc aaa atc ggc tgc ggc atc cag ctg     1256
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        310                 315                 320

acg cgg gag gtg gat ggt gtg tgg gtg tac aac cgc agc agt tac ccc     1304
Thr Arg Glu Val Asp Gly Val Trp Val Tyr Asn Arg Ser Ser Tyr Pro
    325                 330                 335

atc ttc atc aag tcc gcc aca ctg gac aac ccg gac tcc agg acg ctg     1352
Ile Phe Ile Lys Ser Ala Thr Leu Asp Asn Pro Asp Ser Arg Thr Leu
340                 345                 350                 355

ttg gta cac aag gtg ttc ccc ggt ttc tcc atc aag gct ttc gac tac     1400
Leu Val His Lys Val Phe Pro Gly Phe Ser Ile Lys Ala Phe Asp Tyr
                360                 365                 370

gag aag gcg tac agc ctg cag cgg ccc aat gac cac gag ttt atg cag     1448
Glu Lys Ala Tyr Ser Leu Gln Arg Pro Asn Asp His Glu Phe Met Gln
            375                 380                 385

cag ccg tgg acg ggc ttt acc gtg cag atc agc ttt gtg aag ggc tgg     1496
Gln Pro Trp Thr Gly Phe Thr Val Gln Ile Ser Phe Val Lys Gly Trp
        390                 395                 400

ggt cag tgc tac acc cgc cag ttc atc agc agc tgc ccg tgc tgg cta     1544
Gly Gln Cys Tyr Thr Arg Gln Phe Ile Ser Ser Cys Pro Cys Trp Leu
    405                 410                 415

gag gtc atc ttc aac agc cgg tagccgcgtg cggaggggac agagcgtgag        1595
Glu Val Ile Phe Asn Ser Arg
420                 425

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gaaaaataaa gaaaagatgc actttgcttt aatataaatg caaataacaa atgccaaatt   2975
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                               Met Cys Asn Thr Pro Thr Tyr Cys
                                1               5

gac cta gga aag gct gct aag gat gtc ttc aac aaa gga tat ggc ttt       161
Asp Leu Gly Lys Ala Ala Lys Asp Val Phe Asn Lys Gly Tyr Gly Phe
     10                  15                  20

ggc atg gtc aag ata gac ctg aaa acc aag tct tgt agt gga gtg gaa       209
Gly Met Val Lys Ile Asp Leu Lys Thr Lys Ser Cys Ser Gly Val Glu
 25                  30                  35                  40

ttt tct act tct ggt cat gct tac act gat aca ggg aaa gca tca ggc       257
Phe Ser Thr Ser Gly His Ala Tyr Thr Asp Thr Gly Lys Ala Ser Gly
                 45                  50                  55

aac cta gaa acc aaa tat aag gtc tgt aac tat gga ctt acc ttc acc       305
Asn Leu Glu Thr Lys Tyr Lys Val Cys Asn Tyr Gly Leu Thr Phe Thr
             60                  65                  70

cag aaa tgg aac aca gac aat act cta ggg aca gaa atc tct tgg gag       353
Gln Lys Trp Asn Thr Asp Asn Thr Leu Gly Thr Glu Ile Ser Trp Glu
         75                  80                  85

aat aag ttg gct gaa ggg ttg aaa ctg act ctt gat acc ata ttt gta       401
Asn Lys Leu Ala Glu Gly Leu Lys Leu Thr Leu Asp Thr Ile Phe Val
     90                  95                  100

ccg aac aca gga aag aag agt ggg aaa ttg aag gcc tcc tat aaa cgg       449
Pro Asn Thr Gly Lys Lys Ser Gly Lys Leu Lys Ala Ser Tyr Lys Arg
105                 110                 115                 120

gat tgt ttt agt gtt ggc agt aat gtt gat ata gat ttt tct gga cca       497
Asp Cys Phe Ser Val Gly Ser Asn Val Asp Ile Asp Phe Ser Gly Pro
                125                 130                 135

acc atc tat ggc tgg gct gtg ttg gcc ttc gaa ggg tgg ctt gct ggc       545
Thr Ile Tyr Gly Trp Ala Val Leu Ala Phe Glu Gly Trp Leu Ala Gly
            140                 145                 150

tat cag atg agt ttt gac aca gcc aaa tcc aaa ctg tca cag aat aat       593
Tyr Gln Met Ser Phe Asp Thr Ala Lys Ser Lys Leu Ser Gln Asn Asn
        155                 160                 165
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ttc gcc ctg ggt tac aag gct gcg gac ttc cag ctg cac aca cat gtg      641
Phe Ala Leu Gly Tyr Lys Ala Ala Asp Phe Gln Leu His Thr His Val
    170                 175                 180

aac gat ggc act gaa ttt gga ggt tct atc tac cag aag gtg aat gag      689
Asn Asp Gly Thr Glu Phe Gly Gly Ser Ile Tyr Gln Lys Val Asn Glu
185                 190                 195                 200

aag att gaa aca tcc ata aac ctt gct tgg aca gct ggg agt aac aac      737
Lys Ile Glu Thr Ser Ile Asn Leu Ala Trp Thr Ala Gly Ser Asn Asn
                205                 210                 215

acc cgt ttt ggc att gct gct aag tac atg ctg gat tgt aga act tct      785
Thr Arg Phe Gly Ile Ala Ala Lys Tyr Met Leu Asp Cys Arg Thr Ser
            220                 225                 230

ctc tct gct aaa gta aat aat gcc agc ctg att gga ctg ggt tat act      833
Leu Ser Ala Lys Val Asn Asn Ala Ser Leu Ile Gly Leu Gly Tyr Thr
        235                 240                 245

cag acc ctt cga cca gga gtc aaa ttg act tta tca gct tta atc gat      881
Gln Thr Leu Arg Pro Gly Val Lys Leu Thr Leu Ser Ala Leu Ile Asp
    250                 255                 260

ggg aag aac ttc agt gca gga ggt cac aag gtt ggc ttg gga ttt gaa      929
Gly Lys Asn Phe Ser Ala Gly Gly His Lys Val Gly Leu Gly Phe Glu
265                 270                 275                 280

ctg gaa gct taatgtggtt tgaggaaagc atcagatttg tccctggaag              978
Leu Glu Ala


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 1               5                  10                  15
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act ctc ttc ccc gag gag gtg atc gcc acc atc ttt tcc tcc gcc tgg      96
Thr Leu Phe Pro Glu Glu Val Ile Ala Thr Ile Phe Ser Ser Ala Trp
             20                  25                  30

tgg gtc cct ccc tgc tgc ggg aca gca gct gct gtt gtt ggc cta ctg     144
Trp Val Pro Pro Cys Cys Gly Thr Ala Ala Ala Val Val Gly Leu Leu
         35                  40                  45

tac ccc tgt atc gac agt cac ctc gga gaa ccc cac aaa ttt aag aga     192
Tyr Pro Cys Ile Asp Ser His Leu Gly Glu Pro His Lys Phe Lys Arg
     50                  55                  60

gaa tgg gcc agt gtc atg cgc tgc ata gca gtt ttt gtt ggc att aac     240
Glu Trp Ala Ser Val Met Arg Cys Ile Ala Val Phe Val Gly Ile Asn
 65                  70                  75                  80

cac gcc agt gct aaa ttg gat ttt gcc aat aat gtc cag ctg tcc ttg     288
His Ala Ser Ala Lys Leu Asp Phe Ala Asn Asn Val Gln Leu Ser Leu
                 85                  90                  95

act tta gca gcc cta tct ttg ggc ctt tgg tgg aca ttt gat cgt tcc     336
Thr Leu Ala Ala Leu Ser Leu Gly Leu Trp Trp Thr Phe Asp Arg Ser
            100                 105                 110

aga agt ggc ctt ggg ctg ggg atc acc ata gct ttt cta gct acg ctg     384
Arg Ser Gly Leu Gly Leu Gly Ile Thr Ile Ala Phe Leu Ala Thr Leu
        115                 120                 125

atc acg cag ttt ctc gtg tat aat ggt gtc tat cag tat aca tcc cca     432
Ile Thr Gln Phe Leu Val Tyr Asn Gly Val Tyr Gln Tyr Thr Ser Pro
    130                 135                 140

gat ttc ctc tat att cgt tct tgg ctc cct tgt ata ttt ttc tca gga     480
Asp Phe Leu Tyr Ile Arg Ser Trp Leu Pro Cys Ile Phe Phe Ser Gly
145                 150                 155                 160

ggc gtc acg gtg ggg aac ata gga cga cag tta gct atg ggt gtt cct     528
Gly Val Thr Val Gly Asn Ile Gly Arg Gln Leu Ala Met Gly Val Pro
                165                 170                 175

gaa aag ccc cat agt gattgagtct tcaaaaccac cgattctgag agcaaggaag     583
Glu Lys Pro His Ser
            180

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tatttagatc gggctgactg tacaaatgac tcctggaaaa aactcttcac ctagtctaga    703
atagggaggt ggagaatgat gacttaccct gaagtcttcc cttgactgcc cgcactggcg    763
cctgtctgtg ccctggagca ttctgcccag gctacgtggg ttcaggcagg tggcagcttc    823
ccaagtattc gatttcattc atgtgattaa aacaagttgc catatttcaa aaaaaaaaaa    883
aaaaamctcg agaccaaccc gcagttttgt gtcagtgccc aaaggaggta ggttgatggt    943
gcttaacaaa catgaagtat ggtgtaatag gaataatatt tatccnaaag atttttaaaa   1003
atagggctgt gtttaaaaaa aaaaaaaaaa aaa                                1036

<210> 5
<211> 1228
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (1)...(468)

<400> 5
atg tgt cac tct cgc agc tgc cac ccg acc atg acc atc ctg cag gcc       48
Met Cys His Ser Arg Ser Cys His Pro Thr Met Thr Ile Leu Gln Ala
 1               5                  10                  15

ccg acc ccg gcc ccc tcc acc atc ccg gga ccc cgg cgg ggc tcc ggt       96
Pro Thr Pro Ala Pro Ser Thr Ile Pro Gly Pro Arg Arg Gly Ser Gly
            20                  25                  30

cct gag atc ttc acc ttc gac cct ctc ccg gag ccc gca gcg gcc cct      144
Pro Glu Ile Phe Thr Phe Asp Pro Leu Pro Glu Pro Ala Ala Ala Pro
        35                  40                  45

gcc ggg cgc ccc agc gcc tct cgc ggg cac cga aag cgc agc cgc agg      192
Ala Gly Arg Pro Ser Ala Ser Arg Gly His Arg Lys Arg Ser Arg Arg
    50                  55                  60

gtt ctc tac cct cga gtg gtc cgg cgc cag ctg cca gtc gag gaa ccg      240
Val Leu Tyr Pro Arg Val Val Arg Arg Gln Leu Pro Val Glu Glu Pro
 65                  70                  75                  80

aac cca gcc aaa agg ctt ctc ttt ctg ctg ctc acc atc gtc ttc tgc      288
Asn Pro Ala Lys Arg Leu Leu Phe Leu Leu Leu Thr Ile Val Phe Cys
                 85                  90                  95

cag atc ctg atg gct gaa gag ggt gtg ccg gcg ccc ctg cct cca gag      336
Gln Ile Leu Met Ala Glu Glu Gly Val Pro Ala Pro Leu Pro Pro Glu
            100                 105                 110

gac gcc cct aac gcc gca tcc ctg gcg ccc acc cct gtg tcc ccc gtc      384
Asp Ala Pro Asn Ala Ala Ser Leu Ala Pro Thr Pro Val Ser Pro Val
        115                 120                 125

ctc gag ccc ttt aat ctg act tcg gag ccc tcg gac tac gct ctg gac      432
Leu Glu Pro Phe Asn Leu Thr Ser Glu Pro Ser Asp Tyr Ala Leu Asp
    130                 135                 140

ctc agc act ttc ctc cag caa cac ccg gcc gcc ttc taactgtgac           478
Leu Ser Thr Phe Leu Gln Gln His Pro Ala Ala Phe
145                 150                 155

tccccgcact ccccaaaaag aatccgaaaa accacaaaga aacaccaggc gtacctggtg    538
cgcgagagcg tatccccaac tggacttcc gaggcaactt gaactcagaa cactacagcg     598
gagacgccac ccggtgcttg aggcgggacc gaggcgcaca gagaccgagg cgcatagaga    658
ccgaggcaca gcccagctgg ggctaggccc ggtgggaagg agagcgtcgt taatttattt    718
cttattgctc ctaattaata tttatatgta tttatgtacg tcctcctagg tgatggagat    778
gtgtacgtaa tatttatttt aacttatgca agggtgtgag atgttccctc tgctgtaaat    838
gcaggtctct tggtatttat tgagctttgt gggactggtg gaagcaggac acctggaact    898
gcggcaaagt aggagaagaa atggggagga ctcgggtggg ggaggacgtc ccggctggga    958
tgaagtctgg tggtgggtcg taagtttagg aggtgactgc atcctccagc atctcaactc   1018
cgtctgtcta ctgtgtgaga cttcggcgga ccattaggaa tgagatccgt gagatccttc   1078
catcttcttg aagtcgcctt tagggtggct gcgaggtaga gggttggggg ttggtggct    1138
gtcacggagc gactgtcgag atcgcctagt atgttctgtg aacacaaata aaattgattt   1198
actgtcaaaa aaaaaaaaaa aaaactcgag                                    1228
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<210> 6
<211> 3084
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1032)...(1736)

<400> 6
gaattcggca cgaggmcagg agctcctttw ctgcgtctcc catcatgggg cttagggttg 60
agtcttcagg ttctgggggc aggaaggacg ggcactcagg aggccccctc cccatccaca 120
gcccctcttt gggaggggggg aaacttggca acccgggagg catgtggatc ttttcctaag 180
caagatgctg agctggaaag atgggggtgt aaggtaatgt cccaaactga aactttgcca 240
ggcactggga gaggctgtga actcttttct ggctttagaa tttaggtcta gatcccaaaa 300
ggctaagtac cccctggggg ctaaccagag gcatgcctgg gctgagctga accttctggt 360
gcactggccc ctggctgact gctcttctgc aggaagttgg aggagattcc tgaagttgat 420
tcctcaggct ggatgtccaa gggggttgga gtttctgatg tctttctgtc tccctctctt 480
ttctttctct ccctaccagg tccacttctt tcagaggggc ctgcggtgct ctaaaagttc 540
tcctgttaaa gtttagagca aattggttat tattttaaaa tcaataaaac ttttaaaagt 600
actaagacaa cttctaagag gggagtggac agagggcctg gtggcagctc acagtttctt 660
ttctgacctt tggtctcacc caccaagtgt cccacctgag tgcccacctt gcccacctga 720
ggtaatgccc tggggctcca ccagtccaga tccacagggc gcarccatgt gggagtggcg 780
gctgattgtt acccagtagt gttgatagca cattattcat aacagccaaa gagaggaagc 840
aacccaaatg tccattagct gataaatgga taaatgaaat atggtacgtc cgaagaatgg 900
aatatcattc acccatgaaa aagaacgaag tccagcacca aaacgtgcta caacatggat 960
gaacttcgat gactttgtgc cacatgaaag aagaagccag ccacaaaagg ccatatattg 1020
tatgaaatga a atg tcc aga atg ggc aaa ccc ata gag aca caa aaa tct 1070
Met Ser Arg Met Gly Lys Pro Ile Glu Thr Gln Lys Ser
1 5 10

ccg cca cct ccc tac tct cgg ctg tct cct cgc gac gag tac aag cca 1118
Pro Pro Pro Pro Tyr Ser Arg Leu Ser Pro Arg Asp Glu Tyr Lys Pro
15 20 25

ctg gat ctg tcc gat tcc aca ttg tct tac act gaa acg gag gct acc 1166
Leu Asp Leu Ser Asp Ser Thr Leu Ser Tyr Thr Glu Thr Glu Ala Thr
30 35 40 45

aac tcc ctc atc act gct ccg ggt gaa ttc tca gac gcc agc atg tct 1214
Asn Ser Leu Ile Thr Ala Pro Gly Glu Phe Ser Asp Ala Ser Met Ser
50 55 60

ccg gac gcc acc aag ccg agc cac tgg tgc agc gtg gcg tac tgg gag 1262
Pro Asp Ala Thr Lys Pro Ser His Trp Cys Ser Val Ala Tyr Trp Glu
65 70 75

cac cgg acg cgc gtg ggc cgc ctc tat gcg gtg tac gac cag gcc gtc 1310
His Arg Thr Arg Val Gly Arg Leu Tyr Ala Val Tyr Asp Gln Ala Val
80 85 90

agc atc ttc tac gac cta cct cag ggc agc ggc ttc tgc ctg ggc cag 1358
Ser Ile Phe Tyr Asp Leu Pro Gln Gly Ser Gly Phe Cys Leu Gly Gln
95 100 105

ctc aac ctg gag cag cgc agc gag tcg gtg cgg cga acg cgc agc aag 1406
Leu Asn Leu Glu Gln Arg Ser Glu Ser Val Arg Arg Thr Arg Ser Lys
110 115 120 125

```
atc ggc ttc ggc atc ctg ctc agc aag gag ccc gac ggc gtg tgg gcc     1454
Ile Gly Phe Gly Ile Leu Leu Ser Lys Glu Pro Asp Gly Val Trp Ala
                130                 135                 140

tac aac cgc ggc gag cac ccc atc ttc gtc aac tcc ccg acg ctg gac     1502
Tyr Asn Arg Gly Glu His Pro Ile Phe Val Asn Ser Pro Thr Leu Asp
            145                 150                 155

gcg ccc ggc ggc cgc gcc ctg gtc gtg cgc aag gtg ccc ccc ggc tac     1550
Ala Pro Gly Gly Arg Ala Leu Val Val Arg Lys Val Pro Pro Gly Tyr
        160                 165                 170

tcc atc aag gtg ttc gac ttc gag cgc tcg ggc ctg cag cac gcg ccc     1598
Ser Ile Lys Val Phe Asp Phe Glu Arg Ser Gly Leu Gln His Ala Pro
    175                 180                 185

gag ccc gac gcc gcc gac ggc ccc tac gac ccc aac agc gtc cgc atc     1646
Glu Pro Asp Ala Ala Asp Gly Pro Tyr Asp Pro Asn Ser Val Arg Ile
190                 195                 200                 205

agc ttc gcc aag ggc tgg ggg ccc tgc tac tcc cgg cag ttc atc acc     1694
Ser Phe Ala Lys Gly Trp Gly Pro Cys Tyr Ser Arg Gln Phe Ile Thr
                210                 215                 220

tcc tgc ccc tgc tgg ctg gag atc ctc ctc aac aac ccc aga             1736
Ser Cys Pro Cys Trp Leu Glu Ile Leu Leu Asn Asn Pro Arg
            225                 230                 235

tagtggcggc cccggcggga ggggcgggtg ggaggccgcg gccaccgcca cctgccggcc   1796
tcgagagggg ccgatgccca gagacacagc ccccacggac aaaacccccc agatatcatc   1856
tacctagatt taatataaag ttttatatat tatatggaaa tatatattat acttgtaatt   1916
atggagtcat ttttacaatg taattattta tgtatggtgc aatgtgtgta tatggacaaa   1976
acaagaaaga cgcactttgg cttataattc tttcaataca gatatatttt ctttctcttc   2036
ctccttcctc ttccttactt tttatatata tatataaaga aaatgataca gcagagctag   2096
gtggaaaagc ctgggtttgg tgtatggttt ttgagatatt aatgcccaga caaaaagcta   2156
ataccagtca ctcgataata aagtattcgc attatagttt tttttaaact gtcttctttt   2216
tacaaagagg ggcaggtagg gcttcagcgg atttctgacc catcatgtac cttgaaactt   2276
gacctcagtt ttcaagtttt acttttattg gataaagaca gaacaaattg aaaagggagg   2336
aaagtcacat ttactcttaa gtaaaccaga gaaagttctg ttgttccttc ctgcccatgg   2396
ctatggggtg tccagtggat agggatggcg gtggggaaaa ggagaataca ctggccattt   2456
atcctggaca agctcttcca gtctgatgga ggaggttcat gccctagcct agaaaggccc   2516
aggtccatga cccccatctt tgagttatga gcaagctaaa agaagacact atttctcacc   2576
attttgtgga aatggcctgg ggaacaaaga ctgaaatggg ccttgagccc acctgctacc   2636
ttgcagagaa ccatctcgag ccccgtagat ctttttagga cctccacagg statttccca   2696
ccccccagcc aaaaatagct cagaatctgc ccatccaggg cttgtattaa tgatttatgt   2756
aaaggcagat ggtttatttc tactttgtaa aagggaaaag ttgaggttct ggaaggataa   2816
atgatttgct catgagacaa aatcaaggtt agaagttaca tggaattgta ggaccagagc   2876
catatcatta gatcagcttt ctgaagaata ttctccamaa aagaaagtct ccttggccag   2936
ataactaaga ggaatgtttc attgtatatc ttttttcttg gagatttata ttaacatatt   2996
aagtgctctg agaagtcctg tgtattatct cttgctgcat aataaattat ccccamactt   3056
aaaaaaaaaa aaaaaaaaaa aactcgag                                      3084
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<210> 7
<211> 570
<212> PRT
<213> Homo sapiens

<400> 7
Met Pro Gly Glu Thr Glu Glu Pro Arg Pro Pro Glu Gln Gln Asp Gln
1 5 10 15
Glu Gly Gly Glu Ala Ala Lys Ala Ala Pro Glu Glu Pro Gln Gln Arg
20 25 30
Pro Pro Glu Ala Val Ala Ala Ala Pro Ala Gly Thr Thr Ser Ser Arg
35 40 45
Val Leu Arg Gly Gly Arg Asp Arg Gly Arg Ala Ala Ala Ala Ala Ala
50 55 60
Ala Ala Ala Val Ser Arg Arg Arg Lys Ala Glu Tyr Pro Arg Arg Arg
65 70 75 80
Arg Ser Ser Pro Ser Ala Arg Pro Pro Asp Val Pro Gly Gln Gln Pro
85 90 95
Gln Ala Ala Lys Ser Pro Ser Pro Val Gln Gly Lys Lys Ser Pro Arg
100 105 110
Leu Leu Cys Ile Glu Lys Val Thr Thr Asp Lys Asp Pro Lys Glu Glu
115 120 125
Lys Glu Glu Glu Asp Asp Ser Ala Leu Pro Gln Glu Val Ser Ile Ala
130 135 140
Ala Ser Arg Pro Ser Arg Gly Trp Arg Ser Ser Arg Thr Ser Val Ser
145 150 155 160
Arg His Arg Asp Thr Glu Asn Thr Arg Ser Ser Arg Ser Lys Thr Gly
165 170 175
Ser Leu Gln Leu Ile Cys Lys Ser Glu Pro Asn Thr Asp Gln Leu Asp
180 185 190
Tyr Asp Val Gly Glu Glu His Gln Ser Pro Gly Gly Ile Ser Gly Glu
195 200 205
Glu Glu Glu Glu Glu Glu Glu Glu Met Leu Ile Ser Glu Glu Glu Ile
210 215 220
Pro Phe Lys Asp Asp Pro Arg Asp Glu Thr Tyr Lys Pro His Leu Glu
225 230 235 240
Arg Glu Thr Pro Lys Pro Arg Arg Lys Ser Gly Lys Val Lys Glu Glu
245 250 255
Lys Glu Lys Lys Glu Ile Lys Val Glu Val Glu Val Glu Val Lys Glu
260 265 270
Glu Glu Asn Glu Ile Arg Glu Asp Glu Glu Pro Pro Arg Lys Arg Gly
275 280 285
Arg Arg Arg Lys Asp Asp Lys Ser Pro Arg Leu Pro Lys Arg Arg Lys
290 295 300
Lys Pro Pro Ile Gln Tyr Val Arg Cys Glu Met Glu Gly Cys Gly Thr
305 310 315 320
Val Leu Ala His Pro Arg Tyr Leu Gln His His Ile Lys Tyr Gln His
325 330 335
Leu Leu Lys Lys Lys Tyr Val Cys Pro His Pro Ser Cys Gly Arg Leu
340 345 350
Phe Arg Leu Gln Lys Gln Leu Leu Arg His Ala Lys His His Thr Asp
355 360 365
Gln Arg Asp Tyr Ile Cys Glu Tyr Cys Ala Arg Ala Phe Lys Ser Ser
370 375 380
His Asn Leu Ala Val His Arg Met Ile His Thr Gly Glu Lys Pro Leu
385 390 395 400
Gln Cys Glu Ile Cys Gly Phe Thr Cys Arg Gln Lys Ala Ser Leu Asn
405 410 415
Trp His Met Lys Lys His Asp Ala Asp Ser Phe Tyr Gln Phe Ser Cys
420 425 430
Asn Ile Cys Gly Lys Lys Phe Glu Lys Lys Asp Ser Val Val Ala His
435 440 445
Lys Ala Lys Ser His Pro Glu Val Leu Ile Ala Glu Ala Leu Ala Ala

```
    450                 455                 460
Asn Ala Gly Ala Leu Ile Thr Ser Thr Asp Ile Leu Gly Thr Asn Pro
465                 470                 475                 480
Glu Ser Leu Thr Gln Pro Ser Asp Gly Gln Gly Leu Pro Leu Leu Pro
                485                 490                 495
Glu Pro Leu Gly Asn Ser Thr Ser Gly Glu Cys Leu Leu Leu Glu Ala
            500                 505                 510
Glu Gly Met Ser Lys Ser Tyr Cys Ser Gly Thr Glu Arg Val Ser Leu
        515                 520                 525
Met Ala Asp Gly Lys Ile Phe Val Gly Ser Gly Ser Ser Gly Gly Thr
    530                 535                 540
Glu Gly Leu Val Met Asn Ser Asp Ile Leu Gly Ala Thr Thr Glu Val
545                 550                 555                 560
Leu Ile Glu Asp Ser Asp Ser Ala Gly Pro
                565                 570
```

<210> 8
<211> 426
<212> PRT
<213> Homo sapiens

<400> 8

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Met Phe Arg Thr Lys Arg Ser Ala Leu Val Arg Arg Leu Trp Arg Ser
 1               5                  10                  15
Arg Ala Pro Gly Gly Glu Asp Glu Glu Glu Gly Ala Gly Gly Gly Gly
            20                  25                  30
Gly Gly Gly Glu Leu Arg Gly Glu Gly Ala Thr Asp Ser Arg Ala His
        35                  40                  45
Gly Ala Gly Gly Gly Gly Pro Gly Arg Ala Gly Cys Cys Leu Gly Lys
    50                  55                  60
Ala Val Arg Gly Ala Lys Gly His His His Pro His Pro Pro Ala Ala
65                  70                  75                  80
Gly Ala Gly Ala Ala Gly Gly Ala Glu Ala Asp Leu Lys Ala Leu Thr
                85                  90                  95
His Ser Val Leu Lys Lys Leu Lys Glu Arg Gln Leu Glu Leu Leu Leu
            100                 105                 110
Gln Ala Val Glu Ser Arg Gly Gly Thr Arg Thr Ala Cys Leu Leu Leu
        115                 120                 125
Pro Gly Arg Leu Asp Cys Arg Leu Gly Pro Gly Ala Pro Ala Gly Ala
    130                 135                 140
Gln Pro Ala Gln Pro Pro Ser Ser Tyr Ser Leu Pro Leu Leu Leu Cys
145                 150                 155                 160
Lys Val Phe Arg Trp Pro Asp Leu Arg His Ser Ser Glu Val Lys Arg
                165                 170                 175
Leu Cys Cys Cys Glu Ser Tyr Gly Lys Ile Asn Pro Glu Leu Val Cys
            180                 185                 190
Cys Asn Pro His His Leu Ser Arg Leu Cys Glu Leu Glu Ser Pro Pro
        195                 200                 205
Pro Pro Tyr Ser Arg Tyr Pro Met Asp Phe Leu Lys Pro Thr Ala Asp
    210                 215                 220
Cys Pro Asp Ala Val Pro Ser Ser Ala Glu Thr Gly Gly Thr Asn Tyr
225                 230                 235                 240
Leu Ala Pro Gly Gly Leu Ser Asp Ser Gln Leu Leu Leu Glu Pro Gly
                245                 250                 255
Asp Arg Ser His Trp Cys Val Val Ala Tyr Trp Glu Glu Lys Thr Arg
            260                 265                 270
Val Gly Arg Leu Tyr Cys Val Gln Glu Pro Ser Leu Asp Ile Phe Tyr
        275                 280                 285
```

```
Asp Leu Pro Gln Gly Asn Gly Phe Cys Leu Gly Gln Leu Asn Ser Asp
    290                 295                 300
Asn Lys Ser Gln Leu Val Gln Lys Val Arg Ser Lys Ile Gly Cys Gly
305                 310                 315                 320
Ile Gln Leu Thr Arg Glu Val Asp Gly Val Trp Val Tyr Asn Arg Ser
                325                 330                 335
Ser Tyr Pro Ile Phe Ile Lys Ser Ala Thr Leu Asp Asn Pro Asp Ser
            340                 345                 350
Arg Thr Leu Leu Val His Lys Val Phe Pro Gly Phe Ser Ile Lys Ala
        355                 360                 365
Phe Asp Tyr Glu Lys Ala Tyr Ser Leu Gln Arg Pro Asn Asp His Glu
    370                 375                 380
Phe Met Gln Gln Pro Trp Thr Gly Phe Thr Val Gln Ile Ser Phe Val
385                 390                 395                 400
Lys Gly Trp Gly Gln Cys Tyr Thr Arg Gln Phe Ile Ser Ser Cys Pro
                405                 410                 415
Cys Trp Leu Glu Val Ile Phe Asn Ser Arg
            420                 425
```

<210> 9
<211> 283
<212> PRT
<213> Homo sapiens

<400> 9

```
Met Cys Asn Thr Pro Thr Tyr Cys Asp Leu Gly Lys Ala Ala Lys Asp
 1               5                  10                  15
Val Phe Asn Lys Gly Tyr Gly Phe Gly Met Val Lys Ile Asp Leu Lys
            20                  25                  30
Thr Lys Ser Cys Ser Gly Val Glu Phe Ser Thr Ser Gly His Ala Tyr
        35                  40                  45
Thr Asp Thr Gly Lys Ala Ser Gly Asn Leu Glu Thr Lys Tyr Lys Val
    50                  55                  60
Cys Asn Tyr Gly Leu Thr Phe Thr Gln Lys Trp Asn Thr Asp Asn Thr
65                  70                  75                  80
Leu Gly Thr Glu Ile Ser Trp Glu Asn Lys Leu Ala Glu Gly Leu Lys
                85                  90                  95
Leu Thr Leu Asp Thr Ile Phe Val Pro Asn Thr Gly Lys Lys Ser Gly
            100                 105                 110
Lys Leu Lys Ala Ser Tyr Lys Arg Asp Cys Phe Ser Val Gly Ser Asn
        115                 120                 125
Val Asp Ile Asp Phe Ser Gly Pro Thr Ile Tyr Gly Trp Ala Val Leu
    130                 135                 140
Ala Phe Glu Gly Trp Leu Ala Gly Tyr Gln Met Ser Phe Asp Thr Ala
145                 150                 155                 160
Lys Ser Lys Leu Ser Gln Asn Asn Phe Ala Leu Gly Tyr Lys Ala Ala
                165                 170                 175
Asp Phe Gln Leu His Thr His Val Asn Asp Gly Thr Glu Phe Gly Gly
            180                 185                 190
Ser Ile Tyr Gln Lys Val Asn Glu Lys Ile Glu Thr Ser Ile Asn Leu
        195                 200                 205
Ala Trp Thr Ala Gly Ser Asn Asn Thr Arg Phe Gly Ile Ala Ala Lys
    210                 215                 220
Tyr Met Leu Asp Cys Arg Thr Ser Leu Ser Ala Lys Val Asn Asn Ala
225                 230                 235                 240
Ser Leu Ile Gly Leu Gly Tyr Thr Gln Thr Leu Arg Pro Gly Val Lys
                245                 250                 255
Leu Thr Leu Ser Ala Leu Ile Asp Gly Lys Asn Phe Ser Ala Gly Gly
```

```
            260                 265                 270
His Lys Val Gly Leu Gly Phe Glu Leu Glu Ala
        275                 280
```

<210> 10
<211> 181
<212> PRT
<213> Homo sapiens

<400> 10

```
Thr Ser Leu Ala Leu Val Leu Asn Leu Leu Gln Ile Gln Arg Asn Val
 1               5                  10                  15
Thr Leu Phe Pro Glu Glu Val Ile Ala Thr Ile Phe Ser Ser Ala Trp
            20                  25                  30
Trp Val Pro Pro Cys Cys Gly Thr Ala Ala Ala Val Val Gly Leu Leu
        35                  40                  45
Tyr Pro Cys Ile Asp Ser His Leu Gly Glu Pro His Lys Phe Lys Arg
    50                  55                  60
Glu Trp Ala Ser Val Met Arg Cys Ile Ala Val Phe Val Gly Ile Asn
65                  70                  75                  80
His Ala Ser Ala Lys Leu Asp Phe Ala Asn Asn Val Gln Leu Ser Leu
                85                  90                  95
Thr Leu Ala Ala Leu Ser Leu Gly Leu Trp Trp Thr Phe Asp Arg Ser
            100                 105                 110
Arg Ser Gly Leu Gly Leu Gly Ile Thr Ile Ala Phe Leu Ala Thr Leu
        115                 120                 125
Ile Thr Gln Phe Leu Val Tyr Asn Gly Val Tyr Gln Tyr Thr Ser Pro
    130                 135                 140
Asp Phe Leu Tyr Ile Arg Ser Trp Leu Pro Cys Ile Phe Phe Ser Gly
145                 150                 155                 160
Gly Val Thr Val Gly Asn Ile Gly Arg Gln Leu Ala Met Gly Val Pro
                165                 170                 175
Glu Lys Pro His Ser
            180
```

<210> 11
<211> 156
<212> PRT
<213> Homo sapiens

<400> 11

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Met Cys His Ser Arg Ser Cys His Pro Thr Met Thr Ile Leu Gln Ala
 1               5                  10                  15
Pro Thr Pro Ala Pro Ser Thr Ile Pro Gly Pro Arg Arg Gly Ser Gly
            20                  25                  30
Pro Glu Ile Phe Thr Phe Asp Pro Leu Pro Glu Pro Ala Ala Ala Pro
        35                  40                  45
Ala Gly Arg Pro Ser Ala Ser Arg Gly His Arg Lys Arg Ser Arg Arg
    50                  55                  60
Val Leu Tyr Pro Arg Val Val Arg Arg Gln Leu Pro Val Glu Glu Pro
65                  70                  75                  80
Asn Pro Ala Lys Arg Leu Leu Phe Leu Leu Leu Thr Ile Val Phe Cys
                85                  90                  95
Gln Ile Leu Met Ala Glu Glu Gly Val Pro Ala Pro Leu Pro Pro Glu
            100                 105                 110
Asp Ala Pro Asn Ala Ala Ser Leu Ala Pro Thr Pro Val Ser Pro Val
        115                 120                 125
Leu Glu Pro Phe Asn Leu Thr Ser Glu Pro Ser Asp Tyr Ala Leu Asp
```

```
    130                 135                 140
Leu Ser Thr Phe Leu Gln Gln His Pro Ala Ala Phe
145                 150                 155

<210> 12
<211> 235
<212> PRT
<213> Homo sapiens

<400> 12
Met Ser Arg Met Gly Lys Pro Ile Glu Thr Gln Lys Ser Pro Pro Pro
 1               5                  10                  15
Pro Tyr Ser Arg Leu Ser Pro Arg Asp Glu Tyr Lys Pro Leu Asp Leu
            20                  25                  30
Ser Asp Ser Thr Leu Ser Tyr Thr Glu Thr Glu Ala Thr Asn Ser Leu
        35                  40                  45
Ile Thr Ala Pro Gly Glu Phe Ser Asp Ala Ser Met Ser Pro Asp Ala
    50                  55                  60
Thr Lys Pro Ser His Trp Cys Ser Val Ala Tyr Trp Glu His Arg Thr
65                  70                  75                  80
Arg Val Gly Arg Leu Tyr Ala Val Tyr Asp Gln Ala Val Ser Ile Phe
                85                  90                  95
Tyr Asp Leu Pro Gln Gly Ser Gly Phe Cys Leu Gly Gln Leu Asn Leu
            100                 105                 110
Glu Gln Arg Ser Glu Ser Val Arg Arg Thr Arg Ser Lys Ile Gly Phe
        115                 120                 125
Gly Ile Leu Leu Ser Lys Glu Pro Asp Gly Val Trp Ala Tyr Asn Arg
    130                 135                 140
Gly Glu His Pro Ile Phe Val Asn Ser Pro Thr Leu Asp Ala Pro Gly
145                 150                 155                 160
Gly Arg Ala Leu Val Val Arg Lys Val Pro Pro Gly Tyr Ser Ile Lys
                165                 170                 175
Val Phe Asp Phe Glu Arg Ser Gly Leu Gln His Ala Pro Glu Pro Asp
            180                 185                 190
Ala Ala Asp Gly Pro Tyr Asp Pro Asn Ser Val Arg Ile Ser Phe Ala
        195                 200                 205
Lys Gly Trp Gly Pro Cys Tyr Ser Arg Gln Phe Ile Thr Ser Cys Pro
    210                 215                 220
Cys Trp Leu Glu Ile Leu Leu Asn Asn Pro Arg
225                 230                 235

<210> 13
<211> 12
<212> DNA
<213> Homo sapiens

<400> 13
ttttttttt tc                                                    12

<210> 14
<211> 10
<212> DNA
<213> Homo sapiens

<400> 14
gtgaggcgtc                                                      10

<210> 15
```

<211> 10
<212> DNA
<213> Homo sapiens

<400> 15
tggaccggtg 10

<210> 16
<211> 12
<212> DNA
<213> Homo sapiens

<400> 16
ttttttttt ta 12

<210> 17
<211> 10
<212> DNA
<213> Homo sapiens

<400> 17
agacgtccac 10

<210> 18
<211> 10
<212> DNA
<213> Homo sapiens

<400> 18
acttcgccac 10

<210> 19
<211> 10
<212> DNA
<213> Homo sapiens

<400> 19
tcggacgtga 10

<210> 20
<211> 17
<212> DNA
<213> Homo sapiens

<400> 20
catttcattt catacaa 17

<210> 21
<211> 23
<212> DNA
<213> Homo sapiens

<400> 21
catttcattt catacaatat atg 23

<210> 22
<211> 29
<212> DNA

<213> Homo sapiens

<400> 22
catttcattt catacaatat atggccttt 29

<210> 23
<211> 35
<212> DNA
<213> Homo sapiens

<400> 23
catttcattt catacaatat atggcctttt gtggc 35

<210> 24
<211> 35
<212> DNA
<213> Homo sapiens

<400> 24
ggacatttca tttcatacaa tatatggcct tttgt 35

<210> 25
<211> 29
<212> DNA
<213> Homo sapiens

<400> 25
ttcatttcat acaatatatg gccttttgt 29

<210> 26
<211> 23
<212> DNA
<213> Homo sapiens

<400> 26
tcatacaata tatggccttt tgt 23

<210> 27
<211> 17
<212> DNA
<213> Homo sapiens

<400> 27
aatatatggc cttttgt 17

<210> 28
<211> 17
<212> DNA
<213> Homo sapiens

<400> 28
catgcggggc gaggagg 17

<210> 29
<211> 23
<212> DNA
<213> Homo sapiens

<400> 29
catgcggggc gaggaggcga gga 23

<210> 30
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<400> 36
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<223> n = A,T,C or G

<400> 37
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ucagguggg 69

<210> 38
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<212> DNA
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<220>
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<223> n = A,T,C or G

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<211> 76
<212> DNA
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<222> (1)...(76)
<223> n = A,T,C or G

<400> 39
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<210> 40
<211> 68
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(68)
<223> n = A,T,C or G

<400> 40

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<210> 41
<211> 80
<212> DNA
<213> Homo sapiens

<220>
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<222> (1)...(80)
<223> n = A,T,C or G

<400> 41
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ggaggcgagg agaaaagucg 80

<210> 42
<211> 84
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(84)
<223> n = A,T,C or G

<400> 42
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aggugauggg gguugcagca cacc 84

<210> 43
<211> 16
<212> PRT
<213> Homo sapiens

<400> 43
Tyr Thr Asp Thr Gly Lys Ala Ser Gly Asn Leu Glu Thr Lys Tyr Lys
1 5 10 15

<210> 44
<211> 15
<212> PRT
<213> Homo sapiens

<400> 44
Thr Gly Lys Lys Ser Gly Lys Leu Lys Ala Ser Tyr Lys Arg Asp
1 5 10 15

<210> 45
<211> 1817
<212> DNA
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<400> 45
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cttccccccc acccctggcg ccaaaggata tcgtatgttc aggtccaaac gctcggggct 180

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ggacgcagtg ggacagcgag gcgcccaggg cgcggggagg cgccggcgcg caggggccc      420
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<210> 46
<211> 496
<212> PRT
<213> Homo sapiens

<400> 46

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            20                  25                  30
Gly Asp Glu Asp Gly Ser Leu Gly Ser Arg Ala Glu Pro Ala Pro Arg
        35                  40                  45
Ala Arg Glu Gly Gly Gly Cys Gly Arg Ser Glu Val Arg Pro Val Ala
    50                  55                  60
Pro Arg Arg Pro Arg Asp Ala Val Gly Gln Arg Gly Ala Gln Gly Ala
65                  70                  75                  80
Gly Arg Arg Arg Arg Ala Gly Gly Pro Pro Arg Pro Met Ser Glu Pro
                85                  90                  95
Gly Ala Gly Ala Gly Ser Ser Leu Leu Asp Val Ala Glu Pro Gly Gly
            100                 105                 110
Pro Gly Trp Leu Pro Glu Ser Asp Cys Glu Thr Val Thr Cys Cys Leu
        115                 120                 125
Phe Ser Glu Arg Asp Ala Ala Gly Ala Pro Arg Asp Ala Ser Asp Pro
    130                 135                 140
Leu Ala Gly Ala Ala Leu Glu Pro Ala Gly Gly Gly Arg Ser Arg Glu
145                 150                 155                 160
Ala Arg Ser Arg Leu Leu Leu Leu Glu Gln Glu Leu Lys Thr Val Thr
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Tyr Ser Leu Leu Lys Arg Leu Lys Glu Arg Ser Leu Asp Thr Leu Leu
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Glu Ala Val Glu Ser Arg Gly Gly Val Pro Gly Gly Cys Val Leu Val
        195                 200                 205
Pro Arg Ala Asp Leu Arg Leu Gly Gly Gln Pro Ala Pro Pro Gln Leu
    210                 215                 220
Leu Leu Gly Arg Leu Phe Arg Trp Pro Asp Leu Gln His Ala Val Glu
225                 230                 235                 240
Leu Lys Pro Leu Cys Gly Cys His Ser Phe Ala Ala Ala Ala Asp Gly
                245                 250                 255
Pro Thr Val Cys Cys Asn Pro Tyr His Phe Ser Arg Leu Cys Gly Pro
            260                 265                 270
Glu Ser Pro Pro Pro Pro Tyr Ser Arg Leu Ser Pro Arg Asp Glu Tyr
        275                 280                 285
Lys Pro Leu Asp Leu Ser Asp Ser Thr Leu Ser Tyr Thr Glu Thr Glu
    290                 295                 300
Ala Thr Asn Ser Leu Ile Thr Ala Pro Gly Glu Phe Ser Asp Ala Ser
305                 310                 315                 320
Met Ser Pro Asp Ala Thr Lys Pro Ser His Trp Cys Ser Val Ala Tyr
                325                 330                 335
Trp Glu His Arg Thr Arg Val Gly Arg Leu Tyr Ala Val Tyr Asp Gln
            340                 345                 350
Ala Val Ser Ile Phe Tyr Asp Leu Pro Gln Gly Ser Gly Phe Cys Leu
        355                 360                 365
Gly Gln Leu Asn Leu Glu Gln Arg Ser Glu Ser Val Arg Arg Thr Arg
    370                 375                 380
Ser Lys Ile Gly Phe Gly Ile Leu Leu Ser Lys Glu Pro Asp Gly Val
385                 390                 395                 400
Trp Ala Tyr Asn Arg Gly Glu His Pro Ile Phe Val Asn Ser Pro Thr
                405                 410                 415
Leu Asp Ala Pro Gly Gly Arg Ala Leu Val Val Arg Lys Val Pro Pro
            420                 425                 430
Gly Tyr Ser Ile Lys Val Phe Asp Phe Glu Arg Ser Gly Leu Gln His
        435                 440                 445
Ala Pro Glu Pro Asp Ala Ala Asp Gly Pro Tyr Asp Pro Asn Ser Val
    450                 455                 460
Arg Ile Ser Phe Ala Lys Gly Trp Gly Pro Cys Tyr Ser Arg Gln Phe
465                 470                 475                 480
Ile Thr Ser Cys Pro Cys Trp Leu Glu Ile Leu Leu Asn Asn Pro Arg
                485                 490                 495
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